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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/114,962 07/14/98 BREED D AJI-192

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EXAMINER

CULBRETH, E

ART UNIT	PAPER NUMBER
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3611

DATE MAILED:

10/12/00

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Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
09/114,962

Applicant(s)

Breed et al

Examiner

Eric Culbreth

Group Art Unit

3611



☒ Responsive to communication(s) filed on Jul 17, 2000

☒ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 1-31 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-7, 9-14, 16-19, 21-24, and 26-31 is/are rejected.

☒ Claim(s) 8, 15, 20, and 25 is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☒ The proposed drawing correction, filed on Jul 17, 2000 is ☒ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 2

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

Art Unit: 3611

DETAILED ACTION

Information Disclosure Statement

1. Attached to this action is a copy of the PTO-1449 filed 7/14/98 with all the U.S. references initialed. The 1992 document to Breed was not initialed because no copy of that reference was found in this application or in Parent application 08/101,017. (This reference is also not listed on the issued patent of 08/101,017). To ensure proper consideration of this document, a copy should be submitted with applicant's next correspondence.

Specification

2. The disclosure is objected to because of the following informalities:

On page 20, line 4 "assembly," should be "assembly;" in order to form a complete sentence;

In claim 7, line 2, "comprising" should be "comprises" to form a complete sentence.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. Claims 3-5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Art Unit: 3611

In claim 2 there is no antecedent basis for "said sensing means", and hence the claim is not understood.

Claim Rejections - 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 1, 6, 10, 12 and 28-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Haviland (cited by applicant) in view of Breed (U.S. Patent 4,666,182, also cited by applicant).

Haviland discloses airbags 32 along a side of a passenger compartment. Vehicles such as vehicle 10 which carry passengers conventionally have front and rear wheels and a frame defining the front, rear and sides of the vehicle. Breed discloses an air bag system that responds to an impact. Housing 8 defines an interior space. Air bag 18 arranged in the interior space of the housing is expelled from the housing during inflation. Inflator housing 32 contains propellant 34, and sensor 10 has a housing 40 inside housing 32 and hence inside housing 8 (see Figure 1). Sensing mass 41 inside housing 40 moves relative to the sensor housing such that it initiates the inflator above a threshold value of movement. It would have been obvious to one of ordinary skill in the art to modify Haviland to include air bag systems such as those taught by Breed along its sides in order to rapidly discriminate between crashes that do and do not require airbag deployment using simpler systems (Breed, column 1, lines 43-46) (claim 1).

Art Unit: 3611

Regarding claim 6, Breed's mass 41 in the combination is a sensing mass constituting part of accelerometer 41, 39 as broadly and functionally recited (i.e., members 41 and 39 are used to measure negative acceleration as broadly and functionally recited).

Regarding claim 10, as seen in Figure 1 of Breed, system housing 8 includes a mounting plate at 14 with a bottom wall with an aperture at 20 and flanged side walls on inflator housing 32 arranged in aperture 20. This feature would be included in the combination.

In regard to claim 12, Haviland, the primary reference, teaches the cushion system 32 inside door 20.

Regarding claim 28, in the combination Breed's sensor housing 40 is proximate (inside) the inflator housing and has a sensor mass 41 inside. Above a threshold that represents a maximum motion indicating an accident as functionally recited, the sensing mass initiates inflation (claim 29).

6. Claims 2-4 and 14 as well as 30 as best understood are rejected under 35 U.S.C. 103(a) as being unpatentable over Breed in view of Haviland and Merhar (of record).

Merhar discloses an electronic sensing system that determines a crash based on the movement of mass 43 for each piezoelectric crystal 10. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Breed to include a system mounted alongside the passenger as taught by Haviland in order to protect against side impact and to include an electronic sensor such as taught by Merhar in order to guard against inadvertent activation (column 4, lines 23-25 of Merhar). Noting applicant's remarks, Merhar does not depend on being mounted in

Art Unit: 3611

the crush zone, but rather is mounted firmly on the vehicle so that the mass compresses the crystal (column 1, lines 60-65 of Merhar).

Regarding claim 2, in the combination Merhar's system monitors movement of the sensing mass as broadly disclosed and recited in that at column 4, lines 1-25, Merhar teaches that capacitor 16 prevents high amplitude, short duration voltages from setting off the bag (lines 13-25). This in effect is the capacitor of the system monitoring the duration of the signal from the piezoelectric crystals caused by movement of the sensing mass (i.e., monitoring to determine how long the signal lasts).

As noted in the combination Merhar's sensor generates a signal across the capacitor representative of movement of the sensing mass as best understood (column 4, line 12 of Merhar)(claim 3).

Regarding claim 4, again, in view of the broad disclosure, the capacitor 16 of Merhar "records" and monitors the signal to determine duration.

In regard to claim 14, in the combination Merhar teaches power across or from capacitor 16 supplying power to initiate deployment.

Regarding claim 30, Merhar's piezoelectric crystal is means generating a signal in view of the indefinite "sensing means" in claim 3.

7. Claims 5, 7, 9, and 11 as best understood are rejected under 35 U.S.C. 103(a) as being unpatentable over Breed in view of Haviland and further in view of Spies et al (of record).

Art Unit: 3611

Spies et al discloses at column 3, lines 40-62 and column 4, lines 34-54 that a single chip or microprocessor 2 is inside sensor housing 1 and that it uses integrator and comparator means to determine when a signal generated by a mass indicates the bag should be inflated. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Breed to include systems mounted alongside the passenger compartment in view of Haviland's systems 32 on door 20 in order to protect against side collision and to include a microprocessor in the sensor housing such as taught by Spies et al in order to set off the bag using critical parts that can be separated from other parts so as to not be a burden on the environment (column 1, line 65 - column 2, line 6). As Spies et al's chip 2 integrates a signal, it would monitor and record over time signals from the mass's movement (claims 2-3). As broadly recited and disclosed, regarding claims 5 and 7 in the combination Spies et al's system in comparing to determine if the signal is above a threshold would use some sort of algorithm that integrates or takes into account movement over time.

Regarding claim 9, Spies et al teaches a mass that would form part of an accelerometer as broadly disclosed, chip 2 would form an electronic circuit, and Spies et al further teaches primer 4 projecting into inflator housing 7 (i.e., arranged in the housing as broadly recited) in Figure 1 set off when a calculated value from the integrator means and comparator means exceeds a value.

In regard to claim 11, in the combination Spies et al teaches the sensor housing mounted directly to the inflator housing.

Art Unit: 3611

8. Claims 16-19, 21-24, and 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Breed in view of Spies et al.

How Breed and Spies et al apply to the features of claim 16 are discussed in explaining the combination above, with chip or sensor housing 2 outside the inflator housing 7. In Breed the sensor housing is proximate (inside) the inflator housing (claim 17), mass 41 and tube 39 are an accelerometer as broadly disclosed and recited (claim 18), and how the sensing mass is made is not patentable in an article claim, noting MPEP 2113 (claim 19). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Breed to include microprocessor in the sensor housing such as taught by Spies et al in order to set off the bag using critical parts that can be separated from other parts so as to not to be a burden on the environment (column 1, line 65 - column 2, line 6).

Regarding claim 21, in the combination Spies et al teaches primer 4 projecting into the housing and set off by a value calculated or integrated over time.

Similarly, all the features of claims 22-24 and 26-27 are discussed in the rejections above.

9. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Haviland in view of Breed as applied to claim 1 above, and further in view of Spies et al.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Haviland and Breed to include the sensor housing outside the inflator housing in view of Spies et al in order to make the parts readily disassemblable.

Art Unit: 3611

10. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Haviland in view of Breed as applied to claim 1 above, and further in view of Lau et al (newly cited).

In the abstract and in column 2, lines 25-30 Lau et al discloses that sensor 46 can be on the door or in the pillar between inner and outer panels (see Figure 2), in which case it is fixed to the frame. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Haviland and Breed to mount the sensor on a fixed part of the side of the vehicle such as taught by Lau et al in order to mount the sensor in alternative locations to the door when appropriate and best suited.

Allowable Subject Matter

11. Claims 8, 15, 20, and 25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the

Art Unit: 3611

mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric Culbreth whose telephone number is (703) 308-0360.

ec

October 10, 2000


ERIC CULBRETH
PRIMARY EXAMINER

10/10/00